

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application

1-48 (Canceled)

49. (New) A genetically modified plant cell comprising at least one foreign nucleic acid molecule that increases the expression of at least one endogenous gene encoding an OK1 protein, wherein said genetically modified plant cell has an increased activity of at least one OK1 protein in comparison with corresponding wild type plant cells that have not been genetically modified.

50. (New) The genetically modified plant cell according to claim 49, wherein the at least one foreign nucleic acid molecule comprises:

a) a nucleic acid molecule coding a protein having the amino acid sequence of SEQ ID NO: 4;

b) a nucleic acid molecule coding a protein having an amino acid sequence with at least 95% identity to SEQ ID NO: 4;

c) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 3, or the complementary sequence thereof; or

d) a nucleic acid molecule having at least 95% identity to the nucleic acid molecule of a) or c).

51. (New) The genetically modified plant cell according to Claim 49, wherein the genetically modified plant cell comprises a nucleic acid molecule coding a protein having the amino acid sequence of SEQ ID NO: 4.

52. (New) The genetically modified plant cell according to Claim 49, wherein the genetically modified plant cell comprises a nucleic acid molecule coding a protein having an amino acid sequence with at least 95% identity to SEQ ID NO: 4.

53. (New) A genetically modified plant cell according to Claim 49, which synthesises a modified starch in comparison to the corresponding wild type plant cells that have not been genetically modified.

54. (New) The genetically modified plant cell according to Claim 53, wherein the modified starch has an increased starch phosphate content and/or a modified phosphate distribution.
55. (New) The genetically modified plant cell according to Claim 54, wherein the modified starch has a modified C-3 phosphate to C-6 phosphate ratio.
56. (New) The genetically modified plant cell according to Claim 49, wherein the genetically modified plant cell comprises a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 3, or the complementary sequence thereof.
57. (New) The genetically modified plant cell according to Claim 50, wherein the genetically modified plant cell comprises a nucleic acid molecule having at least 95% identity to the nucleic acid molecule of a) or c).
58. (New) A plant comprising one or more genetically modified plant cells according to Claim 49.
59. (New) A plant according to Claim 58, which is a starch-storing plant.
60. (New) A plant according to Claim 59, which is a maize plant or wheat plant.
61. (New) Propagation material from a plant according to Claim 58.
62. (New) A harvestable plant part of a plant according to Claim 58.
63. (New) An isolated nucleic acid molecule coding a protein with the enzymatic activity of an OK1 protein, comprising:
- a) a nucleic acid molecule coding a protein having the amino acid sequence of SEQ ID NO: 4; or
 - b) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 3, or the complementary sequence thereof.
64. (New) The nucleic acid molecule according to Claim 63, wherein said nucleic acid molecule is a nucleic acid molecule coding a protein having the amino acid sequence of SEQ ID NO: 4.

65. (New) A recombinant nucleic acid molecule comprising a nucleic acid molecule according to Claim 63.
66. (New) A vector comprising a nucleic acid molecule according to Claim 63.
67. (New) The vector according to Claim 66, wherein the nucleic acid molecule is linked with at least one regulatory sequence, which initiates transcription in prokaryotic or eukaryotic cells.
68. (New) A host cell, which is genetically modified with a nucleic acid molecule according to Claim 63.
69. (New) A composition comprising a nucleic acid molecule according to Claim 63.
70. (New) A method comprising using the composition of Claim 69 to identify a plant cell having an increased activity of at least one OK1 protein in comparison to wild type plant cells that have not been genetically modified.
71. (New) A vector comprising a recombinant nucleic acid molecule according to Claim 65.
72. (New) A host cell, which is genetically modified with a recombinant nucleic acid molecule according to Claim 65.
73. (New) A host cell, which is genetically modified with a vector according to claim 66.
74. (New) A host cell, which is genetically modified with a vector according to claim 71.
75. (New) A composition comprising a recombinant nucleic acid molecule according to claim 65.
76. (New) The nucleic acid molecule according to Claim 63, wherein said nucleic acid molecule comprises the nucleotide sequence of SEQ ID NO: 3, or the complementary sequence thereof.
77. (New) A method of manufacturing a genetically modified plant, comprising:
 - a) genetically modifying a plant cell by introducing at least one foreign nucleic acid molecule that increases the expression of at least one endogenous gene encoding an OK1 protein into said plant cell, wherein said genetically modified plant cell has an increased activity of at least

one OK1 protein in comparison with corresponding wild type plant cells that have not been genetically modified;

b) regenerating a plant from one or more genetically modified plant cells from step a);
and

c) optionally producing one or more additional plants from a plant according to step b).

78. (New) A method of manufacturing a genetically modified plant according to claim 77, comprising:

a) introducing at least one foreign nucleic acid molecule into a plant cell, wherein said foreign nucleic acid molecule is:

i) a nucleic acid molecule coding a protein having the amino acid sequence of SEQ ID NO: 4;

ii) a nucleic acid molecule coding a protein having an amino acid sequence with at least 95% identity to SEQ ID NO: 4;

iii) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 3, or the complementary sequence thereof; or

iv) a nucleic acid molecule having at least 95% identity to the nucleic acid molecule of i) or iii),

b) regenerating a plant from one or more plant cells from step a); and

c) optionally producing one or more additional plants from a plant according to step b).

79. (New) The method according to Claim 77, wherein said nucleic acid molecule is a nucleic acid molecule coding a protein having the amino acid sequence of SEQ ID NO: 4.

80. (New) The method according to Claim 77, wherein said nucleic acid molecule is a nucleic acid molecule coding a protein having an amino acid sequence with at least 95% identity to SEQ ID NO: 4.

81. (New) The method according to Claim 77, wherein said nucleic acid molecule comprises the nucleotide sequence of SEQ ID NO: 3, or the complementary sequence thereof.
82. (New) The method according to Claim 78, wherein said nucleic acid molecule is a nucleic acid molecule having at least 95% identity to the nucleic acid molecule of i) or iii).
83. (New) The method of claim 77, wherein said genetically modified plant cell synthesises a modified starch in comparison to the corresponding wild type plant cells that have not been genetically modified.
84. (New) The method of claim 83, wherein the modified starch has an increased starch phosphate content and/or a modified phosphate distribution.
85. (New) The method of claim 84, wherein the modified starch has a modified C-3 phosphate to C-6 phosphate ratio.